

This listing of claims will replace all prior versions,
and listings, of claims in the application:

1 Claim 1 (currently amended): For use with a node of a
2 communications network, a method for setting up a
3 connection in response to a request, the method comprising:
4 a) determining a next link of the connection based on
5 routing information;
6 b) determining whether the determined next link of
7 the connection has sufficient capacity to meet that
8 requested by the request;
9 c) if the determined next link of the connection is
10 determined to not have sufficient capacity to meet
11 that requested by the request, repeating (b) and (c)
12 at least once to try an alternative next link;
13 d) if the determined next link of the connection is
14 determined to have sufficient capacity to meet that
15 requested by the request, then updating connection
16 admission control information ~~to decrease the capacity~~
17 ~~of the link~~ to reflect the capacity requested by the
18 request.

1 Claim 2 (original): The method of claim 1 wherein if the
2 determined next link of the connection is determined to
3 have sufficient capacity to meet that requested by the
4 request, then further requesting a connection identifier.

1 Claim 3 (original): The method of claim 2 further
2 comprising:
3 e) accepting a requested connection identifier
4 received; and

5 f) providing an interface number and allocation
6 control information to an interface associated with
7 the interface number.

1 Claim 4 (original): The method of claim 3 further
2 comprising:

3 g) if an interface receives an interface number and
4 allocation control information associated with the
5 interface number, then
6 i) determining a bit-vector corresponding to the
7 interface number,
8 ii) determining a first available part of the
9 link, and
10 iii) marking the bit vector such that bits
11 corresponding to the determined first available
12 part of the link are marked as unavailable.

1 Claim 5 (original): The method of claim 4 wherein the link
2 is a time division multiplexed link.

1 Claim 6 (original): The method of claim 4 wherein the link
2 is a wavelength division multiplexed link.

1 Claim 7 (original): The method of claim 1 further
2 comprising:

3 e) accepting allocated capacity information;
4 f) updating switch mapping information in response to
5 the received allocated capacity information; and
6 g) updating state information based on the allocated
7 capacity information.

1 Claim 8 (original): The method of claim 3 further
2 comprising:

- 3 g) accepting allocated capacity information;
- 4 h) updating switch mapping information in response to
- 5 the received allocated capacity information;
- 6 i) updating state information based on the allocated
- 7 capacity information; and
- 8 h) generating a set up message including the
- 9 connection identifier and the interface.

1 Claim 9 (currently amended): For use with a node of a
2 communications network, the node having interfaces
3 terminating communications links, an apparatus for setting
4 up a connection in response to a request, the apparatus
5 comprising:

- 6 a) at least one storage device storing
 - 7 i) routing information;
 - 8 ii) connection admission control information;
 - 9 and
- 10 b) a programmable device adapted to
 - 11 i) determine a next link of the connection based
 - 12 on the routing information;
 - 13 ii) determine whether the determined next link
 - 14 of the connection has sufficient capacity to meet
 - 15 that requested by the request of the call;
 - 16 iii) repeat (ii) and (ii) at least once to try
 - 17 an alternative next link if the next link of the
 - 18 connection is determined to not have sufficient
 - 19 capacity to meet that requested by the request;
 - 20 and
 - 21 iv) update the connection admission control
 - 22 information ~~to decrease the capacity of the link~~

23 to reflect the capacity requested by the request
24 if the determined next link of the connection is
25 determined to have sufficient capacity to meet
26 that requested by the request.

1 Claim 10 (original): The apparatus of claim 9 wherein the
2 programmable device is a field programmable gate array.

1 Claim 11 (original): The device of claim 9 wherein the
2 programmable device is further adapted to request a
3 connection identifier if the determined next link of the
4 connection is determined to have sufficient capacity to
5 meet that requested by the request.

1 Claim 12 (original): The device of claim 11 wherein the
2 programmable device is further adapted to
3 - accept a requested connection identifier; and
4 - provide an interface number and allocation control
5 information to an interface associated with the
6 interface number.

1 Claim 13 (original): The device of claim 12 wherein the
2 programmable device is further adapted to
3 - if an interface receives an interface number and
4 allocation control information associated with the
5 interface number, then
6 i) determining a bit-vector corresponding to the
7 interface number,
8 ii) determining a first available part of the
9 link, and

10 iii) marking the bit vector such that bits
11 corresponding to the determined first available
12 part of the link are marked as unavailable.

1 Claim 14 (original): The device of claim 13 wherein the
2 link is a time division multiplexed link.

1 Claim 15 (original): The device of claim 13 wherein the
2 link is a wavelength division multiplexed link.

1 Claim 16 (original): The device of claim 9 wherein the
2 programmable device is further adapted to
3 - accepting allocated capacity information;
4 - updating switch mapping information in response to
5 the received allocated capacity information; and
6 - updating state information based on the allocated
7 capacity information.

Claims 17-19 (withdrawn)

Claim 20 (canceled)

1 Claim 21 (currently amended): The method of claim 22 ~~20~~
2 wherein the communications resources is bandwidth.

1 Claim 22 (currently amended): For use in call signaling
2 protocol, a method for use by a node of a communications
3 network to determine a link of a connection, the method
4 comprising:
5 a) determining a next hop of the connection based on
6 routing information;

7 b) determining a link associated with the determined
8 next hop;
9 c) determining whether or not the determined link has
10 sufficient communications resources to satisfy the
11 call; and
12 d) only if it is determined that the determined link
13 has sufficient communication resources to satisfy the
14 call, then allocating communication resources of the
15 link to the call,
16 ~~The method of claim 20~~ wherein the link is a multiplexed
17 link having channels, and
18 wherein the act of allocating communication resources
19 of the link to the call includes determining available
20 channels of the link until the sum of capacity of the
21 determined available channels is enough to satisfy the
22 call.

1 Claim 23 (original): The method of claim 22 wherein the
2 link is a time division multiplexed link and wherein the
3 channels are time-slots.

1 Claim 24 (original): The method of claim 22 wherein the
2 link is a wavelength division multiplexed link and wherein
3 the channels are wavelengths.

Claim 25 (canceled)

1 Claim 26 (currently amended): The apparatus of claim 27 ~~25~~
2 wherein the communications resources is bandwidth.

1 Claim 27 (currently amended): For use in call signaling
2 protocol, a method for use by a node of a communications

3 network to determine a link of a connection, the method
4 comprising:

- 5 a) determining a next hop of the connection based on
6 routing information;
7 b) determining a link associated with the determined
8 next hop;
9 c) determining whether or not the determined link has
10 sufficient communications resources to satisfy the
11 call; and
12 d) only if it is determined that the determined link
13 has sufficient communication resources to satisfy the
14 call, then allocating communication resources of the
15 link to the call,

16 ~~The apparatus of claim 25 wherein the link is a multiplexed~~
17 ~~link having channels, and~~

18 wherein the means for allocating communication
19 resources of the link to the call includes means for
20 determining available channels of the link until the sum of
21 capacity of the determined available channels is enough to
22 satisfy the call.

1 Claim 28 (original): The apparatus of claim 27 wherein the
2 link is a time division multiplexed link and wherein the
3 channels are time-slots.

1 Claim 29 (original): The apparatus of claim 27 wherein the
2 link is a wavelength division multiplexed link and wherein
3 the channels are wavelengths.

1 Claim 30 (new): The method of claim 1 wherein the act of
2 updating connection admission control information to
3 reflect the capacity requested by the request if the

4 determined next link of the connection is determined to
5 have sufficient capacity to meet that requested by the
6 request, includes decreasing the capacity of the link.

1 Claim 31 (new): The apparatus of claim 9 wherein the
2 programmable device is adapted to update the connection
3 admission control information to decrease the capacity of
4 the link to reflect the capacity requested by the request
5 if the determined next link of the connection is determined
6 to have sufficient capacity to meet that requested by the
7 request.